ZIRCONIUM-89 PET IMAGING AGENT FOR CANCER

SUMMARY

This technology is a new generation of rationally designed chelating agents that improve the complexation of Zirconium-89 for PET imaging of cancers.

REFERENCE NUMBER

E-111-2013

PRODUCT TYPE

- Diagnostics
- Research Materials

KEYWORDS

- PET
- imaging agent
- zirconium-89

COLLABORATION OPPORTUNITY

This invention is available for licensing and co-development.

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DESCRIPTION OF TECHNOLOGY

Researchers at the NCI Radiation Oncology Branch and NIH CIT Center for Molecular Modeling developed a tetrahydroxamate chelation technology that provides a more-stable Zr-89 complex as an immuno-PET cancer imaging agent. In either the linear or the macrocyclic form, the tetrahydroxamate complexes exhibit greater stability as chelating agents compared to Zr-89 complexed to the siderophore desferrioxamine B (DFB), a trihydroxamate, which represents the current state of the art chemistry and the agent currently in clinical use.

In the Zr-89-DFB imaging agents, Zr-89 dissociates from the chelate, resulting in an increasing radioisotope accumulation in the bone 2-3 days after injection. *In vitro* studies demonstrate the tetrahydroxamate-chelated Zr-89 remained kinetically inert for seven or more days, thereby reducing the amount of Zr-89 that is released compared to the complex containing DFB.

POTENTIAL COMMERCIAL APPLICATIONS

PET imaging, especially for cancer and in particular Immuno-PET imaging

COMPETITIVE ADVANTAGES

- High stability with low toxicity

INVENTOR(S)

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DEVELOPMENT STAGE

- Prototype

PUBLICATIONS

Guerard F, et al. [PMID 23250287]; Guerard F, et al. [PMID 2470517]

PATENT STATUS

- **U.S. Filed:** US, Application No. 61/779,016 filed 13 Mar 2013
- **Foreign Filed:** EP Application # 14779019

RELATED TECHNOLOGIES

- E-194-2007
- E-226-2006
- E-067-1990

THERAPEUTIC AREA

- Cancer/Neoplasm